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The “Russian Factor” in the Middle East Military Balance

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FOREWORD

The Geopolitical Situation

The 11th of September 2001 affected the political situation in the whole world so seriously that many factors in the relationship between the countries of the former Soviet Union (FSU) and the Middle East, (ME) including the sale of weapons and military technologies, might change in the future. However, there are no signs that this might happen in the near future, and whatever changes there are will probably not be radical.

The present article is based entirely on an analysis of the long-term and objective interests of three countries of the FSU, Russia, Ukraine, and Belarus, countries that manufacture and supply arms and military-technical services to the ME.

In addition, the article will note certain aspects and nuances of the policies of the three countries, above all, Russia, of course, that might change in the course of the coming months.

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CHAPTER 1

The Geopolitical Interests of Russia

Russia's interests in the ME stem partly from the legacy of the USSR and partly from new factors that have emerged during the past ten years. On the whole, these interests may be defined as follows:

1. Return to a strategically important region.

The Russian political elite, and a significant portion of the Russian population as well, continue to consider their country a natural superpower that was deprived of this role only by accident and because of the foolishness of the rulers (Gorbachev above all). The pain of the loss of the role and privileges of a great nation is genuinely felt to this very day by these sectors of the population, just as people genuinely feel the pain of an amputated limb. And among these "phantom pains", perhaps the sharpest ones relate to the ME. It was here in particular that the USSR demonstrated its power to the whole world most effectively and for the longest period of time. If Russia were to regain for itself an important role in this region of the world, it would have not only immediate and considerable political, but also economic (in connection with the oil trade) and psychological significance for the Russian political establishment. The new conception of Russian foreign policy adopted by the government at the beginning of the year 2000 unequivocally defined the ME as a region "of special interest," indeed; the ME was placed first on the list of such regions.

2. The search for strategic allies.

Russia has not yet found its role in the multi-, and mono-, polar world. Alliances with such big and dynamic developing countries as China and India are simply unrealistic. The difference in demographic and economic potential is too great. Russian experts say that the most probable political allies of Moscow in the foreseeable future might be such countries as Iran, Turkey, Egypt, Syria, or Brazil, Vietnam, Malaysia, and Indonesia. That is, the ME again holds a place of preference. There the countries are of approximately the same economic caliber as Russia, and they have similar interests in world politics – independence from the USA and China, in particular. At present Russia has a big military-technological advantage over the ME countries, but this advantage will be reduced over the years, so it is necessary for Russia to exploit it now.

3. Coordination of oil pricing policy.

The Russian economy is dependent on the export of oil and gas to an even greater degree than was the economy of the USSR. Oil and gas bring in almost three-quarters of the state budget. A rise in price of one dollar per barrel of oil means the addition of \$1 billion to the state budget (and vice versa for a decline in the price). This is a very important fact for any Russian government and this forces Moscow to look to the Arab countries and Iran when formulating its policies.

4. Preservation of Russia's military power.

This is a new factor, having arisen only in the mid 1990s, but it is a very powerful one. The Russian army's level of armaments is dependent upon the sale of arms abroad. The military-industrial complex (MIC) did not simply eat up over 20% (or, according to other, more well-

founded estimations, as much as 40%) of the Soviet budget; it was the main “think-tank” of the nation and had concentrated in it almost all the hi-tech in the country. This is still the case even though a significant portion of the plants and research and development [R&D] centers have been closed down. The MIC in Russia still monopolizes the capability, within Russia, to produce goods on a high, world-class level. In recent years, Moscow has been selling approximately \$2.5 billion worth of weapons (in cash) per year, and Russia is working very hard to increase sales to \$3.5-4.5 billion.

The significance of this is revealed by the following fact: the finishing touches were put on the latest airplane models, rockets, and other weapons (that is, new series were launched and delivered to the Russian army) only after India and China concluded contracts valued at hundreds of millions dollars for the acquisition of these weapons.

Another indicative fact is this: a military scientific research institute dealing with aviation systems declared that orders from the Russian army constitute not more than 10-20% of its yearly budget, while orders from the Chinese and Indian armies amount to about 80%.¹

The Topol inter-continental rocket project constitutes an exception with regard to governmental support. But Russia’s future as an atomic power will depend also on the income received from the export of arms and technology to China, India, Iran and others.

5. The combination of political interests and profitable export of arms and their mutual reinforcement.

Although today the biggest clients for Russian arms are China and India (who together account for approximately 50% of Russia’s arms exports), Russia can hardly count upon further growth of sales there. The Chinese and Indians will soon reach a level where they will be able to produce and export the most up-to-date arms themselves. The ME is the next most important region today after China and India, and it is there that Russia has a good chance of increasing its sales significantly in the near future.

If, during the Soviet period, the supplying of arms to friendly countries was a means of realizing policies defined beforehand, then now the roles of policy and the supplying of arms are often reversed. Countries able to order weapons valued at hundreds of millions of dollars per year can count upon receiving political support from the Kremlin thereafter.

In sum, the ME is unique in the sense that several different Russian interests come together in one and the same region of the world. The dependence of the Russian economy on the export of oil and gas and Russia’s reliance on the export of arms are constant and long-term factors of an objective character. Both of these interests are very closely intertwined with the Kremlin’s political line in the ME. Nowhere else is there such a combination, and this constitutes the uniqueness of the ME. The types of relations Moscow maintains with the ME bring much benefit to Russia, on both the financial and political planes. Moscow might change its approach, but only if changes in the domestic economic situation were to take place. However, this cannot be counted upon to happen in the next 5-10 years.

The Geopolitical Interests of Ukraine and Belarus

Ukraine and Belarus appeared on the world market at the beginning of the 1990s, when they began selling the huge arsenals on their territories left over from the Soviet army. However, they later proved that they were capable, not only of selling arms, but also of carrying out the modernization of Soviet-made tanks and airplanes and of continuing the production of certain

advanced types of weapons. Both states maintain R&D centers that produce original military hi-tech, some of which can already be found in the ME.

The significance of these states as suppliers of services or as factors supplementing Russian export of arms cannot be disregarded. The quantity of Soviet weaponry in the ME is so large that this factor alone creates a basis for the emergence of mutual interests. It goes without saying that mutual interests are also created by the demands of ME states for the acquisition of new weapons and technologies. Ukraine and Belarus offer these, just like they offer their modernization services, at prices significantly lower than those of Russia.

In principle, the geopolitical situation of Ukraine in the ME is similar to that of Russia; the difference is mainly in the scale of Ukraine's ambitions. The new FSU states (like Ukraine and Belarus) do not have an "imperialist complex", and they do not export oil, but rather buy it. Like Russia, Ukraine is interested in exporting goods, among which arms predominate. This helps define their policies in relation to the Arab countries. For the most part, Ukraine has taken a relatively balanced position in relation to the Israeli-Palestinian conflict. However, this was recently disrupted somewhat by the fact that an official embassy of Palestine was opened in Kiev, which act was supposed to be followed by the opening of a Ukrainian embassy in Gaza.

The deepening economic crisis in Ukraine and the dominant position occupied there by the "gray" market in the sphere of arms exports, attracted, and continues to attract, such countries as Syria, Libya, Iran, and Iraq to Ukraine. At the same time, Ukrainian politicians see the future of the country as part of the EU and NATO, and they constantly turn to the West for aid. This forces them to take into consideration the opinions of the USA and to make their system of export controls stricter.

Belarus is known as an "enfant terrible". It is an authoritarian state that conducts a consistently anti-American policy. It was among the three to four countries of the world that refused to honor the minute of silence for the victims of the terrorist acts of September 11, 2001. Belarus is prepared to supply any military equipment to any point in the world. At the same time, it cannot allow itself to ignore international law too blatantly and strives to avoid scandals and possible sanctions in this sphere.

It is completely natural that among the actual and potential clients of Minsk had been in the early 1990s many ME countries that in the past received Soviet weapons. But, after the period of prosperity (1992-1995), the black and gray market, and the selling off of military property in Minsk, began a period when collaboration with ME states came under governmental control. The emphasis then was placed upon supplying military equipment, including electronics and radar, and providing services for the modernization and repair of weapons.

CHAPTER 2

The Military-Technical Cooperation

Before proceeding to a direct analysis of the scale and types of weapons supplied to the ME from the FSU, it is necessary to make several remarks of a methodological character.

As early as the mid-1990s, experts in Moscow were noting that international statistics on such topics as the sale of military equipment from the arsenals of the defunct USSR (from both Russia and other FSU states), and the repair and modernization of Soviet-made military equipment, were incomplete and created a deceptive picture. In this view, the estimates were

too low, both in regard to the amount of equipment involved and the number of categories of equipment listed.²

Data not presented by official agencies of the FSU governments or camouflaged in the form of barter transactions is also ignored when reference books on the weapons trade and military balance are compiled by institutions such as the (London) International Institute for Strategic Studies (IISS), the Stockholm Institute of Peace Research (SIPRI), and the Jaffee Center at Tel Aviv University. Only after the data of certain Moscow experts was published – without any changes or supplementary references – in articles put out by the Center for International Trade and Security at the University of Georgia, did some reference works begin to take their findings into consideration.³ Furthermore, until now, not one of the institutes named above has taken into consideration such transactions as the delivery of auxiliary military equipment (the definition of which, indeed, may be formulated in many different ways), ammunition, and the transfer of military technology. But what distinguishes the collaboration of these FSU states – successors to the USSR MIC – with foreign clients lies precisely in these areas. The present article makes use of data and assessments that were published by Moscow experts in the years 1995-2000 and that correspond to the same criteria of credibility adopted with regard to other sources including Western ones.

Russian Arms Exports to Syria

It would not be an exaggeration to say that Syria lost more than any other Arab country from the collapse of the USSR. At the end of 1989, when deliveries of Soviet weapons to Syria were stopped, 90% of that country’s army’s weapons and equipment were “made in USSR”. But one should not rush to the conclusion that the Syrian army declined in terms of its technical capabilities because Syria lost the support of the USSR.

In 1992, Moscow declared that Damascus’ debts for military deliveries since the end of the 1950s amounted to \$11 billion (the total for all deliveries was evaluated at \$26 billion).⁴ Up until now, the end of 2001, Syria has not acknowledged the amounts of its debts. Very soon Damascus realized that of all the acquisitions it made during thirty years of ideological friendship with the communist world, probably the greatest was not weapons, but the ten thousand officers who received education in the USSR during those years. And, of course, the personal connections they made in the military and political spheres.

In 1992, Syria was one of the first to realize that the huge weapons arsenals inherited by Kiev, Minsk, Alma Ata, and others, would be sold very cheaply to whoever offered cash. In 1993, Lieutenant-General Maslin, head of the 12th Directorate of the Russian Ministry of Defense (atomic weapons and munitions), issued the following official declaration: “Syrian officers have established very close ties at all levels of the Ukrainian army, including the subdivisions that guard nuclear rockets and bombs.”⁵

Later, the Moscow research center PIR, one of whose consultants Maslin became when he retired, published analyses of unofficial trade in weapons in the states of the FSU. From them and from several other sources, one may conclude that in 1992-1995, Syria spent \$200-250 million in Ukraine, \$150-160 million in Belarus, and about \$100 million in Kazakhstan on the purchase of arms.⁶ Syria bought, most of all, munitions and spare parts for tanks, airplanes, and all kinds of Soviet weapons. The term munitions also includes rockets against tanks, airplanes, etc.

It must be emphasized that Syria bought these weapons in the gray and black markets. For example, in Ukraine, where in 1992-1995 property of the former Soviet army valued at \$30

billion was sold, 80% of the transactions were conducted unofficially, that is, in cash, and the prices were half, a third, or even less, than the official ones. In Russia the black market accounted for nearly 60% of all sales in 1994, and in Belarus it accounted for 50-60%.⁷

This means that Damascus, having spent about half a billion dollars, received weapons and spare parts worth \$1-1.5 billion, data which is not taken into consideration in the assessments made by Western experts, including Israelis. However, such amounts – even taking into consideration defects characteristic of purchases made on the black market, such as flaws, and other elements – cannot be ignored when assessing the military capabilities of the Syrian army. This is even truer since the Syrians have demonstrated great skill in orienting themselves in the new situation in the FSU. Thus, they make up for inadequate spare parts, technical documentation, and other forms of service by placing orders in other places in the FSU and by inviting specialists to Syria from various countries, and even from Eastern Europe.

In 1992, Damascus bought T-72 tanks from Moscow for \$270 million (the only large official transaction in 1999-2000), but for this sum the Syrians received 270 tanks and 300 artillery systems, which should have cost them at least \$550 million.⁸ Later, Damascus' orders were reduced to ridiculous figures, one or two million dollars per year. Only in 1998, when the possibility of acquiring up-to-date arms outside of Russia was sharply reduced, did Damascus buy 2,000 Kornet- and Metis-type anti-tank rocket installations from Russia for \$138 million. At the same time, Hafez al-Assad began negotiations for the acquisition of Tor, Buk-type and S-300 anti-aircraft and anti-missile defense systems and also the latest models of MiG and Tu airplanes. Until the time of the present writing, these negotiations have not been completed, mainly because of the financial problems confronting Damascus.⁹

Today, having received new-model Scuds from North Korea in the summer of 2000, Syria has at its disposal, according to Russian estimates, 400-600 Scud-B and Scud-C rockets (about 250 rockets of each type and 24-36 installations).¹⁰ It also has M7-type rockets (from China), and SS-21 Tochka-type rockets, with a range of about 70 kilometers (18 launching installations and at least 220 rockets). The North Korean B- and C-model Scuds have a range of 700 kilometers, thus enabling the Syrians to threaten the whole territory of Israel rather seriously. What Syria now needs strategically is dependable cover for its Scud rocket batteries, protecting them from fire for even a few hours, during which time they could launch their rockets and inflict unacceptable damage on Israel. The S-300 anti-missile systems, (with a defense radius, according to the Russians, of 100 kilometers for aerodynamic targets and 40 for ballistic targets),¹¹ can give the Syrians the best cover they seek. However, that goal can be reached even by systems more modest in their defense radius, whereas others like the Tor- or Buk-type. Normally Tor- and Buk-type are significantly cheaper (\$18-20 million). Such budgets are more realistic for today's Damascus ruler.

As is known, S-300, are very expensive, and Syria, for the time being, is not prepared to spend \$170-180 million for one such system.

The 7-10 systems of Tor or Buk can be supplied within 12-18 months. If Syria acquires and installs these anti-missile systems around her rocket battery sites, be taken as a Damascus' readiness to attack Israel.

V. Kozyulin, a Moscow expert on the Syrian armed forces, thinks that the Syrian Scuds based near the city of Khama are probably equipped with chemical warheads. He notes that each one of the 18 launching stations in this area has only two rockets, while elsewhere in the world, ten is the accepted number. Only in East Germany did the army maintain less than ten

rockets per station (there were five per station), and this is explained by the fact that those five rockets were equipped with chemical and nuclear warheads^{12, 13}

Russian-Iraqi Ties

Iraq was the biggest client of the Soviet MIC, and probably the best from the point of view of payment. The Russians estimate that the total military aid extended to Iraq during the period 1960-1980 was worth \$31 billion. As of September 1, 1990, Baghdad had repaid Moscow approximately \$23 billion of this sum. In 1996, Iraq officially acknowledged the remaining \$8 billion as a debt and promised to repay it after the removal of UN sanctions.¹⁴

In the 1980s, Moscow sold Saddam about 60 arms production licenses and helped in the construction and equipping of five plants for the production of howitzers, machine guns and automatic weapons, shells, bombs, and other munitions, and the assembling of T-72M1 tanks. Iraq paid about \$900 million for this, and about \$586 million remain to be paid.

Agreements have been signed and decisions taken by the Russian and Iraqi governments with regard to two more big projects. After the removal of sanctions, the realization of the projects can begin. They include a large tank factory for the production of 2,000 tanks per year and an aviation factory in the city of Mosul for the production of SU-25 airplanes, modern MI-28 helicopters, aviation engines, and rockets.¹⁵

According to Russian assessments, at the end of 1996 Saddam had in service 5,300 tanks of various types, including 776 T-72-model tanks, 779 military airplanes, including 33 MIG-23PDCs, 30 SU-24MK bombers, and 5 TU-22 long-range bombers.¹⁶ A significant part of Iraq's artillery and anti-aircraft weapons is also of Soviet production.

If the sanctions imposed against Baghdad in 1990 had actually been observed, then by 1996 all of its weapons should have turned into a pile of junk. But, according to Russian assessments, this did not happen, neither by 1996, nor by 2001. After the collapse of the Soviet Union, the Iraqis became active in the gray and black arms markets of the FSU, using companies from other Arab countries as fronts. They bought, first of all, spare parts and munitions. Deliveries were made via Bulgaria, other Balkan countries, and Jordan. The Iraqis most probably succeeded in buying more valuable weapons as well, helicopters, rockets, and radar. There is information that containers holding disassembled Mi-24 helicopters were brought into Iraq by air, and then specialists from FSU countries reassembled them on the spot.¹⁷

The military equipment and arms received by the Iraqis illegally from Russia at the beginning of the 1990s are evaluated at tens of millions of dollars, while those received from all the former Soviet arsenals in the whole FSU are evaluated at several hundred millions of dollars. The affair of the Iraqis' acquisition of 150 gyroscopes and accelerometers (components in the guidance systems of ballistic missiles) from a secret scientific research institute located near Moscow was uncovered by the Americans, and Moscow had to admit this fact.¹⁸ But this affair itself demonstrates the existence of a well-organized system for purchases, on the one hand, and, on the other hand, the acquiescent, and on the whole sympathetic, stance of the Russian authorities toward the violators of the system.¹⁹

The ties developed over many years were not broken after the affair of the gyroscopes. Indirect data indicate that there were on-going sales of designs and other documentation regarding rocket technology.²⁰

In this connection, it is necessary to note the possibility that the Pechora-2 anti-aircraft defense system has been delivered to Iraq. In their time, no less than 30 units of Pechora-1 (S-125) systems were sold to that country.²¹ According to claims made by Moscow, it was by using a system of this type that the Serbs brought down three F-117 airplanes during the war in Kosovo. During the past two years, Russian arms dealers have been forcefully advertising the modification of the Pechora, emphasizing such virtues as a greater kill zone (with the distance increased from 17 to 27 kilometers, and up to 65,000 feet in altitude), new warheads ensuring 250-300% greater effectiveness, and a completely new radar system, using electronic blocs developed for the S-300 system. Maintenance of the Pechora-2 is much simpler than in the case of its predecessor (Pechora-1), and there is no need to create a new infrastructure or retrain personnel.²²

For Iraq, Pechora-2 seems to be a very attractive solution to its needs, since the new content could be slipped in under the camouflage of installations from 20 years ago, and seemingly, with much plausibility, it could be asserted that there was no violation of the international sanctions. Meanwhile, the threat to American and other planes flying in the airspace of Iraq would increase markedly.

Prior to September 11, 2001, Russian military plants openly expressed their interest in renewing contacts with Iraq. Its paying of its debts (which, to be sure, not everyone believes will happen), and even more, its placing orders for new weapons and modernization services, and agreeing to huge projects for the construction of two plants, all this might save dozens of Russian work teams from being fired and numerous departments of scientific research institutes from being closed down.

At the beginning of October 2001, Baghdad announced a program of orders from Russia in the amount of \$42 billion, in the fields of oil exploration and extraction, and other spheres connected with oil – all this, of course, after the removal of the UN sanctions.²³ The moment chosen by the Iraqis for their announcement, the beginning of the American bombing of Afghanistan, on the one hand, and the signing of an agreement between Moscow and Tehran, on the other hand, does not mislead anyone, (not even Moscow). At the same time, the heads of the Russian military industries understand full well that very soon after the orders for oil equipment become a reality, orders addressed to the military might follow. Russian politicians, meanwhile, see here the coming together of economic and strategic interests, and they have been dreaming about this since the beginning of the 1990s.

Russian-Iranian Cooperation

Iran received Soviet arms during the 1980s and continued buying from Russia for a while after the USSR collapsed. In 1993, Iran received 100 units of T-72 tanks, in 1994, 20 such. Iran was also sold a production license. In 1998, Tehran began to construct its own tanks.

By the mid-1990s, the various branches of the Iranian army were all supplied with Russian arms and equipment: artillery systems, various types of anti-aircraft and anti-missile defense installations (including portable models of the Strela type), tanks, armored vehicles and automotive equipment, etc.²⁴

From the beginning of the 1990s, Tehran made one attempt after another to receive nuclear and rocket technology from Moscow. Such a focus on export goods whose sale was limited by international agreements caused a certain embarrassment to the Russian government. In addition, it knew that this was a very slippery path for Russian manufacturers. Equipment for the production of nuclear weapons components, in the guise of peaceful technology, might

arrive in Tehran as a result of bribes (which almost happened, and may indeed have happened with regard to centrifuges for the separation of uranium). As American expert W. Potter noted in 1992, “If you are in the market for a fast breeder reactor, enriched uranium, a little heavy water, or even ‘peaceful nuclear explosives’, Moscow is the place to shop.”²⁵

In the later 1990s, within the limitations of the Gore-Chernomyrdin agreements, Russia continued deliveries of such weapons as MI-171 helicopters (since 1999, 21 units, including several with flotation gear for rescue operations at sea), and Iranian pilots continue to learn about new machines at the pilot training school in Omsk.²⁶

In the year 2000, Iran came to a strategic decision; it would undertake a 25-year program of modernization of its armed forces, with the emphasis on Russian weapons and technology. This was what Russia was trying to get from Iran, and now it was worthwhile for Moscow to abandon the limitations placed upon it by the Gore-Chernomyrdin agreements.

In 2001, it became known that Iran was undertaking a broad program of purchases in Russia, including:

1. The creation of an integrated anti-aircraft and anti-missile defense system in the country, with dozens of installations, an S-300-type system, and also systems of medium- and short-range radius, Buk-type (SA-11, with a radius of 30 kilometers), and Tor-type (SA-15, with a radius of 15 kilometers).
2. The creation of an anti-aircraft defense system for the defense of atomic and military manufacturing installations, first among which is the atomic station at Bushehr. Such a system, according to Russian experts, includes medium- and short-range installations.
3. The licensed production of weapons – shells and rockets for tanks, artillery instruments, airplanes, and warships.
4. Modernization of present aircraft and aviation equipment, and modernization of the three Kilo-type submarines acquired from Russia.
5. Creation of service, repair, and training centers for the maintenance of Iran’s land, air, and sea forces.
6. A space program that envisions sending six satellites into space for Iran, possibly with the aid of the Iranian Shihab-4 rocket.
7. Training hundreds of Iranian military and technical specialists in Russian training facilities.²⁷

This program was shaped to order for the needs of the Russian MIC. Each of its branches receives a “life buoy,” if only a small one. It is known that the US, responding negatively to Russia’s sale of several technologies to Tehran, cancelled orders for the launching of several satellites with the aid of Russian rockets. These losses only made the calamitous situation of the Russian Space Agency worse. Now Iran has begun to worry about this Agency. The value of the Iranian program for Moscow, first of all, is in its long-term character, which gives the Russian MIC a certain stability, and secondly, in its orders for anti-aircraft and anti-missile defense systems. The sale of such expensive systems (\$170-180 million for the S-300 and tens of millions of dollars for the Tor- and Buk-type systems) is a very profitable transaction. At the same time, receiving these tens of millions of dollars per year would enable the Russians to develop the next, more effective model the S-400 (called “Favorite”), and to resolve with it some problems in the defense of Russian airspace from rocket attack. Improved future models should give Moscow an even bigger market, including the rest of the Middle East.

Assessing the situation from another angle, from the Iranian side, it should be noted that five of the seven points of the program described above, the third to the seventh, are aimed at creating a powerful MIC in Iran itself, and only the first two have to do with the importation of arms. These arms are the latest models, which the Iranians also plan to manufacture themselves in the future. With Russia's aid, the Iranians intend to strengthen and develop the whole pyramid of their MIC – from scientific laboratories to lines of production and technical services at military bases.

For the know-how and technology it receives, Tehran intends to pay sums that stay within the means of its economy, and are in any case, very much lower than those paid by the Persian Gulf countries or Saudi Arabia for the massive import of western contemporary arms. Officials of both Russia and Iran, at the time of Khatami's visit to Moscow a short time ago, in early October 2001, spoke about annual payments by Iran of from \$300 to 400 million.²⁸ However, it is not clear how the list of items Iran wants, which includes very expensive anti-aircraft defense systems, can be reconciled with such low terms of repayment. It seems most likely that both sides are trying to diminish the impression other countries get of the scope of the collaboration between Moscow and Tehran.

In 2001, deliveries began of several units of the S-300 PMU-1 anti-aircraft defense system, 1,000 lightweight Igla shoulder-launched rockets, 25 Mi-17 helicopters, 8 SU-25 airplanes, and also contemporary gamma-DI and Kasta-2E2 radar systems. As early as 1998 Iran was interested in the acquisition of this equipment, and at that time this list was estimated to be worth \$2 billion.

Thanks to Russian production licenses for the manufacture of the T-72 tank, in 2001 Iran began turning out several types of shells for the T-72's cannon, and also fire control systems suitable for several different tank models.²⁹

The latest Russian studies indicate that Iran already has quite a powerful MIC infrastructure. In essence, this conclusion confirms the assessments of P. Bernstein et al. who as early as the beginning of the 1990s wrote about Iran's increased development of those branches of the economy that would give a firm foundation to the military-industrial base.³⁰ Now, with more massive aid from the Russians, the Iranians are approaching a level where there will be no obstacles to their producing independently all the basic kinds of weapons: tanks, airplanes, warships, and rockets, including ballistic and guided missiles. A more detailed list of the arms produced in Iran that can be obtained from Russian sources includes: portable Strela anti-aircraft rockets, Igla shoulder-launched rockets, Tandem, Fagot, and Konkurs anti-tank rockets, and the Grad-type system.³¹ These are solely Russian weapons, (while Iran also produces military equipment of Western design). About 40 Iranian plants specialize in aviation technologies, rockets, chemicals for the use of the military, and shipbuilding, each surpassing by far the level of technological development of all the other Iranian industries, something which is reminiscent of the situation in the former USSR; there, military enterprises represented the 20th century, whereas enterprises in the civilian sphere, by comparison, remained in the 19th century. Where Iran lags behind is mainly in the electronics industry, and that is why Tehran is now placing special emphasis on this in its collaboration with Moscow. In the framework of Iran's broad, long-term collaboration with Russia, Iran will surely receive, more easily than previously, both materials and technological know-how that can serve dual functions (peaceful and military ones).³²

With regard to the question of nuclear weapons, none of the Russian analysts bring any convincing conclusions to the effect that Iran is **not** able to undertake the production of atomic weapons. On the contrary, here and there the researchers make remarks to the effect

that the tendency exists, that scientific and technological potential is being accumulated, and that the “black holes” in Iranian industry arouse suspicion.³³

Behind all the claims that Moscow is only supplying “not dangerous” materials and technologies and that the IAEA is supervising matters, the selfish interests of the Russian Atomic Power Ministry and the military circles connected with it are clearly visible. Among the responsibilities of the Atomic Power Ministry in Russia is supervision over the development of atomic weapons. Ever since the beginning of the 1990s, and up until the present time, all the Ministry’s arguments aimed at convincing the government to support it reduce themselves to just one. If there were no Bushehr, plus another one or two such projects that give the Atomic Power Ministry real income, the US, with the aid of credits and aid treaties, would get its hands on all the forms of nuclear technology in Russia, and there would be no possibility of developing new nuclear weapons in secret.³⁴

Only the availability of independent sources of hard cash, plus the assistance of the government, enable the Atomic Power Ministry to preserve those remnants of great power status that Russia still has, thanks to atomic technology and research.³⁵

Not one Russian leader has any weighty arguments against the logic presented above (nor do any American politicians either). V. Putin’s record in supporting the Atomic Power Ministry is especially persuasive. In April 1999, the Russian Security Council, (where Putin was formerly secretary), declared Russia’s new nuclear doctrine.

The doctrine, (the full text of which has not been published to date), in outline, gives priority to the development of new types of atomic weapons, like neutron weapons, which should significantly expand Russia’s response options in different military conflicts, especially on a regional scale.³⁶ Later on, Putin tried to ensure that the work on nuclear arms had not only political support, but also financial.³⁷ At the same time, the Atomic Power Ministry’s interest in completing the construction of the bloc at Bushehr, providing maintenance and programs for the training of personnel, and so on, did not diminish. True, all of this is peaceful technology. However, from 2001 onwards, it will be more difficult than before for Moscow to say no to Tehran when delicate questions arise.

Russian-Egyptian Ties

Military and technical ties between Cairo and Moscow were renewed in 1999, after a long break, when negotiations began regarding a contract worth \$120-150 million for the delivery of Pechora-2 anti-aircraft defense systems. At least 30 Pechora-1-type installations had remained in Egypt from the 1970s. Their quality, it would appear, proved to be not so bad in practice. According to assertions made by the Russians, one of the many advantages of the new, modernized system is that it can be delivered in quite a short time – “in up to two years”. Egypt should receive the first of the systems it ordered by the end of 2001. Such contracts almost always provide for 6-8 systems.³⁸

Contacts with Libya

In 1999, the General Director of the State Unitary Company Rosvooruzhenie G. Ropota, declared that after the removal of sanctions from Libya, significant new contracts could be expected for new weapons and modernization of the Soviet military equipment already possessed by Khadaffi. However, it would seem that having investigated the market for military services in the FSU, Tripoli prefers to deal with the cheaper Ukrainians and

Belarussians when modernizing its tanks and other equipment. Still, there is a chance that Russia will sell Libya Pechora-2 systems at a cost of \$200-250 million.³⁸

Contacts with the Persian Gulf Countries and Yemen

Moscow relates to the Persian Gulf area very, very attentively. At the exhibition in Abu-Dhabi in March 2001 it displayed the newest models, ones that have never been demonstrated anywhere else before; and rocket system novelties, for example, the Iskander ground-to-ground rocket, which is distinguished by its great accuracy; anti-aircraft and anti-rocket defense systems; and weapons for naval forces.³⁹ In 2000 details were announced also on negotiations between Russia and UAE on a wide range of weaponry. However, for the time being, large-scale sales and deliveries remain in the realm of negotiations. One of the main reasons could be the failure of some models of Kornet and Metis anti-tank missiles in their range tests in the second part of 2000 and early 2001, when up to 50% of these rockets had failed.⁴⁰

Only in Yemen are there significant amounts of Soviet-model weapons. In recent years, the Russians sold that country several dozen additional T-72 tanks. But even if Russia manages also to deliver several new MiG or Su airplanes, Yemen does not hold out any great prospects for Russia. For their part, the Yemenis seek Ukrainian and other firms that will fulfill their orders for the modernization of Soviet arms cheaper than Russia will.

Several thousand anti-tank rockets and other arms have been sold to Kuwait and Bahrain. A big preliminary agreement was signed with Bahrain for the creation of Pantsyr-type anti-aircraft and anti-rocket defense systems, costing several hundreds of millions of dollars.⁴¹

CHAPTER 3

The Export of Arms from Ukraine and Belarus

Ukraine

At the beginning of the 1990s, Ukraine's main clients for buying arms from the arsenals of the former Soviet army included such Middle East countries as Syria, Iraq, and Egypt. Each one bought arms at a cost of hundreds of millions of dollars. Both Syria and Iraq bought military equipment and spare parts for many types of arms, and also anti-aircraft, anti-rocket, and anti-tank equipment. Egypt bought from Ukraine large quantities of munitions for Soviet tanks, bombs for airplanes, mines, and hand grenades.⁴²

It is known that international terrorist organizations were among the clients of the black market in arms in Ukraine, for example, the Tamil Tigers, who placed orders for explosives through front firms. Although direct indications of ties between Ukraine and Middle Eastern terrorist circles have not been published, the concentration of agents from Arab countries in Kiev in 1992-1995 was too great for the terrorist organizations to have remained without purchasing anything.

Ukraine inherited from the USSR not only huge amounts of military equipment, which in 1991 exceeded the amount of arms held by all the European members of NATO together, but also an MIC that included approximately 40% of all enterprises producing rocket technology in the USSR.⁴³

From 1996, Ukraine began selling new weapons of its own production – first of all, new tanks based on the T-80-model (for Pakistan) – and offering modernization services for tanks and

airplanes. The Syrians were the first clients for the modernization of tanks. In 1997-1998, 200 T-55 tanks were modernized, and soon an order for the modernization of 300 T-72 tanks was received, including the creation of an active defense for armor, the installation of night vision instruments, and more, and all of this for \$500,000 – a cost lower than anywhere else in the world.⁴⁴

In 1996, Ukraine delivered to Libya some anti-aircraft and anti-rocket defense systems from the old Soviet stocks, although Kiev denies this. It is also known that negotiations were held between the Kharkov firm, “Montazh Elektro” and Libya regarding the repair of airplanes, boats, and ships, and also the delivery of products used in the development of rockets.⁴⁵

In 1999, Kiev announced the mass production of its own version of S-300 anti-aircraft defense systems. Previously, only parts for this system were produced in Ukraine. They were named “Donets” and priced more cheaply than the Russian version.⁴⁶

Ukraine, together with Russia, is taking part in the modernization of Antonov transport planes for Iran. This is a rare instance of collaboration between Kiev and Moscow. Although official declarations talk only about civilian versions of the Antonov airplanes, there are clear indications that the modernization of An-32-model planes for the military is also taking place, and Iran has declared its interest in the purchase of the new model of the An-70.⁴⁷

After the Soviet arsenals were basically emptied, at the end of the 1990s, the Syrians (and perhaps companies from other Arab countries) began to seek new paths for obtaining contemporary arms at low prices. Using front firms under their control, they began to invest money in local enterprises working in the fields of electronics and laser technologies. In this way they could gain access to the production of the most up-to-date means of controlling, targeting, and guiding rockets electronically. Since military manufacturers, as a rule, maintain powerful construction and research departments, it is quite likely that various devices were developed specially to meet the needs of the Syrian army.

For a long time the Ukrainian authorities sabotaged Western demands for export controls. In recent years, however, Ukraine has made its export controls regime much stricter. After pressure from the US, and having received compensation, the Ukrainians agreed not to sell sensitive technologies to Iran (for example, components for centrifuges for enriching uranium). However, up until this very day, the power of the gray market in Ukraine is still great, and many of the yet surviving research centers and plants find it difficult to reject orders that promise to extricate them from the unrelieved poverty in which they find themselves. There is no reason to suppose that Iran has now given up its efforts to obtain military electronics and rocket technologies from Ukraine, perhaps using the same means as the Syrians, or different means. Although the scope of such orders cannot be very big, they are fully able to provide some missing links, in the line of rocket production technology.

Belarus

Formally, Belarus does not refuse to observe the limitations placed by the international community on the arms trade. At the same time, Minsk was a popular address as early as the beginning of the 1990s for those countries unable to receive arms from Moscow, either because of sanctions and limitations they were under or because the prices did not suit them. Also, up to the end of the 1990s, Belarus was the place where spare parts for Soviet equipment could be obtained most easily.

Private firms are permitted to engage in the arms trade in Belarus, but it is known that this is only a convenient cover for the state arms trade company, created in 1996, “Bel Spets Vnesh

Tekhnika". From the beginning of the 1990s, when the sell-off of former Soviet arsenals began, Minsk's main clients from the Middle East were Syria, Iraq, and Iran, and also the countries of the Persian Gulf.⁴⁸

In contrast to Ukraine, Belarus does not produce end-product weapons. Therefore, after the sell-off of Soviet arsenals, Minsk began to specialize in the export of such items as optics for tanks, artillery, and submarines. Minsk supplies all these products – in amounts that do not fall below the quantities sold abroad – to Russian factories that assemble complete weapons.⁴⁹

Dozens of Belarussian enterprises work for Russian military plants. Such cooperation makes it possible for Russia to deliver arms with "Made in Belarus" labels to those clients to whom Moscow does not want to sell arms directly.

The countries of the Middle East have Soviet-made equipment in abundance, and Belarussian companies are ready and willing to undertake all forms of modernization of this equipment. For the time being, the projects of this type concentrate on replacing the chassis of military tractors and blocs of electronics in the guidance systems of anti-aircraft and anti-rocket defense systems. A new sphere which both Ukraine and Belarus are trying to develop is the modernization of Soviet military equipment, which exists in great abundance in the Middle East. Belarus, as well as Ukraine, is emerging in this sphere as a tough competitor of Russia.

President Lukashenko personally receives almost every guest from the Arab countries, trying to broaden cooperation with Libya and Iraq, without scaring away Kuwait.⁵⁰ However, nothing is known about any big successes of Minsk arms dealers in the Arab capitals.

Still, to make up for it on the other side, it is known that the Syrians have established close personal ties with the local elite in Minsk, as they have done in Kiev. Also as in Kiev, the Syrians are working to achieve financial penetration in the sphere of military production, as a way of guaranteeing continued collaboration. Through their partners in "Bel Spets Vnesh Tekhnika", they have already invested at least \$90 million in a company that produces means of communication, including military communications, and probably tens of millions of dollars in enterprises that develop electronics.⁵¹

According to official data, the large Russian financial group "Oboronnye Sistemy" ("Defense Systems") controls the plants able to produce powerful chassis for rocket transporters, such as those in Minsk, the radio plant in the city of Orsha, which always produced means of communication for the army, and also the Minsk amalgamation "Agat". "Agat" is considered the largest center of R & D in the FSU in the field of radar. Probably Agat is in charge of the development and production of the state-of-the-art Russian infra-red detection system, Phoenix. They say such "passive" detection systems cannot be detected and that is why it has a unique advantage for anti-missile, anti-aircraft and anti-tank missile systems.⁵²

Formally Moscow controlled "Agat" and other important military productions in Belarus. However, the local authorities also have their own not inconsiderable share, through "Bel Spets Vnesh Tekhnika". Thus, Damascus attains the possibility of gaining influence and placing orders for needed equipment under the most beneficial circumstances.

It may very well be that what Syria has succeeded in achieving, Iran will also succeed in (if it has not already done so), and Iran has a broader spectrum of military electronics needs, as well as possessing great financial resources.

CHAPTER 4

Conclusions and assessment of possible changes in policy after September 11, 2001

1. Important changes are taking place between the FSU and the ME in the growth of deliveries of technology and know-how for the production of arms instead of just weapons transfers. This is most clearly manifested in the collaboration with Iran. Analysis of the programs of military technical cooperation indicate clearly that Tehran intends to use Moscow, first of all, as a contractor in the construction of its own powerful military industry. *And the very construction of an Iranian MIC – ramified and up-to-date, including military-chemical and space rocket branches – organically presupposes that nuclear weapons will be the capstone of this pyramid of power.*⁵³ The program of military and technical collaboration with Iran answers the vital needs of Russia's MIC so well that it is difficult to imagine an alternative to it. Furthermore, the interests of the Russian MIC and the interests of Iran with regard to those regions of the Caspian Sea rich in oil are similar. All of this, together with Russia's hopes of influencing, through Iran, events in the hottest spots in the world, makes this collaboration exceptionally important for Moscow.

2. Possible Changes in Moscow-Tehran Relations

In the agreement with Iran, the Kremlin repeats limitations previously imposed, namely, only weapons of a defensive character will be supplied. Thus, the door is left open for a potential compromise with the US with regard to the sale of one or another specific technology. Any change in Russia's policy is difficult to foresee right now. Even if Russia were really to draw quite near to the US, Russia would still insist upon its independence in such important spheres as arms production and the development of nuclear technologies. Moscow might introduce changes in the list of the most up-to-date arms to be supplied to Iran, but it will not relinquish the basis of its military and technological collaboration with that country. And since Tehran is not counting on the delivery of specific types of weapons, but on the development of a military industrial and scientific infrastructure in Iran, such limitations will hardly be able to slow down seriously Iran's race for arms.

The signing of an agreement on the beginning of concrete military collaboration between Moscow and Tehran at the beginning of October 2001 – just as the US was poised to attack the Taliban in Afghanistan – and the publicity given to the signing – which did not exaggerate the matter, but also did not lower its profile – speak for themselves.

3. Iraq continues to use the weaknesses of the Russian military industries skillfully and receives the most needed equipment. Judging by Baghdad's October declaration, it intends to follow the example of Iran: large purchases of equipment and technology made over many years, but first in the oil industry field. In his visit to the US, (November 13-15, 2001), President Putin indicated that Russia does not take Saddam's promises too seriously. After all, Russian interests in Iraq are mainly economic, not strategic, as in Iran. This means that they can be differed if the Kremlin gains a chance to obtain Iraq's oil money without Saddam still being an issue.

4. The configuration of Syria's purchases in the FSU in the 1990s gives an idea of its strategic goals – to preserve the technical preparedness of the regular army at an acceptable level on the basis of cheap purchases in Ukraine and Belarus, and to receive

from Moscow hi-tech weapons – anti-tank, anti-aircraft, and anti-missile defense systems. Damascus is seeking new paths for receiving the most up-to-date weapons, and in this connection its efforts to invest in industries that produce military radio equipment and electronic instruments – which have been successful in Belarus and Ukraine, at least – are characteristic.

5. Sales of arms to Egypt, the countries of the Persian Gulf, and Libya have had a sporadic character. Although agreements about supplying anti-aircraft defense systems involving large sums of money have been signed with Bahrain, for example, their chances of actually being carried out are unclear, as are the chances for future broadening of collaboration.
6. Ukraine and Belarus play a supplementary role in the programs for supplying Russian arms to the Middle East. At the same time, certain types of weapons developed by Kiev recently – such as, the system analogous to the S-300-type anti-aircraft and anti-missile defense system – might prove more attractive for buyers in the ME because of their lower prices.

Taking into consideration the situation after September 11, 2001, Kiev may be expected to be even more attentive to requests by the US in regard to the sale of technology to such countries as Iran and Libya. Unfortunately, this does not mean that Iran, or Syria, for example, will be unsuccessful in their efforts to receive much needed military electronics or elements of rocket technology, through the use of breaches of rules and corruption, or with the aid of third countries. Minsk is less attentive to the opinions of the West and is probably trying to use the increased demand for certain types of weapons to start working on deliveries.

APPENDIX

The Iranian Military Industry

The following types of industry and production have been put into operation in Iran:

1. Missile production:
 - Operational tactical missiles (OTR) of the *Scud-B*- (range up to 300 km.) and *Scud-C*-types (range up to 500 km.);
 - *Shihab-3* (up to 1,300 km.) and *Shihab-4* (up to 2,000 km.). Ballistic missiles and *Shihab-5* intercontinental ballistic missiles are under development;
 - Anti-aircraft systems on the basis of the *Khouk* anti-aircraft missile system;
 - *Strela-2* and *Stinger*-type portable anti-aircraft missile systems;
 - Iran plans to purchase *Rapier* guided anti-aircraft missiles in Great Britain;
 - Chinese operational tactical missiles with separating head part;
 - *TOU-Tandem*, *TOU-2*, *Milan*, *Fagot*, and *Konkurs* anti-tank guided missiles (PTUR) and *Igla-1* anti-aircraft missile systems;
 - *Grad*-(Katyusha type artillery weapons).
2. Aviation production:

- There are repair plants making repairs on F-4, F-5, F-14, and C-130 airplanes, and assembly plants assembling helicopters from complete kits delivered by the USA, France, and Italy;
- *Fadzhir* training aircraft, with a 900 km. flight range, are constructed, on the basis of the Swedish PC-7 turbo-propeller plane;
- Single-engine *Parastu* airplanes are constructed, with a 1,300 km. flight range, and a 20-mm. cannon;
- Iran has developed technology that enables it to produce a helicopter of its own construction, the *Shabaviz*, on the basis of the B-205 (USA);
- *Mokhadzher-2* and *Ababil* BLA are produced;
- A program for advancing the production of avionics (fuselages and wings for the Russian Mig-29) has been approved;
- Work is being undertaken so that production can begin on Iran’s own helicopter, the *Zafar-300*, on the basis of the AB-206 (USA).

3. Armored tank industry:

- Repairs are being made on British *Chieftan* and American M-47, M-48, and M-60 tanks;
- Motors and caterpillar tracks for these tanks are being produced;
- Armored personnel carriers are being assembled and repairs on Soviet- and Chinese-model tanks are being made;
- T-55 tanks are being modernized;
- Armored personnel carriers are being assembled on rubber tracks (60% of the components are produced in Iran);
- Steps are being taken to produce the *Barak* armored personnel carrier, with a 50-mm. cannon;
- The assembling of 1,000 units of Russian T-72 and APCs (BTR-2) is being planned, including the production of working parts, frames, turrets, motors, and complete sets of assemblies and components;
- The licensed production of Spanish armored personnel carriers is planned, and also the production of *Zulfagar* tanks of Iran’s own construction, on the basis of foreign models.

4. Artillery and other arms industries:

- Recoilless arms, mortars, machine guns, submachine guns, rifles, Uzi- and AK-type machine-pistols, and pistols are being produced;
- Spare parts for most artillery systems are being produced;
- The production of ZU-23-2 anti-aircraft installations has begun;
- The technology for making barrels for 105-mm. tank cannons has been refined;
- Preparations are underway for the licensed production of 122 calibre and 130-mm. guns;
- Optical instruments for artillery are being repaired and produced;

- The production of self-propelled artillery installations (SAU) is being planned.

5. The production of munitions:

- There are several factories that produce artillery shells, hand grenades, and ammunition for rifles;
- There are about 20 gunpowder plants and enterprises that produce explosive materials.

Output capacity – up to 500,000 shells, 20,000 airplane bombs, 100,000 mines, 60 million cartridges, 10,000 tons of explosive materials and gunpowder annually.

It is planned to increase the assortment.

6. Shipbuilding:

Launches, gunboats, transport ships, and hovercraft are being built, and the construction of mini-submarines is planned.

7. Radio electronics:

- a. This field is insufficiently developed. Means of communication, computer equipment, and instruments of radio electronic warfare are produced, and the repair of aviation electronics is carried out.

Source: V.Sazhin, "Military Power of Iran: From Ashes to Diamond", in *The Past, Present, Future of Islamic Revolution in Iran*, The Institute of Oriental Studies, Russian Academy of Sciences, Moscow, 1999, pp. 73-85.

ENDNOTES:

- ¹ Interview with Academician E. Fedosov, *Nedelia*, February 16-22, 1998.
- ² K. Makienko, "Military-Technical Cooperation of the CIS Foreign Countries", *Eksport Vooruzhenii* (Arms Export), no. 3, 1999, <www.cast.ru>.
- ³ *SIPRI Yearbook, 2000*, "Transfers of Major Conventional Weapons", p. 352. The data on Ukraine and Belarus by K. Makienko had been published after publication in *The Monitor* (University of Georgia, Athens, Ga.), vol. 5, no. 3, 1999.
- ⁴ V. Koziulin, "Rossia-Siria: Voenno-Tekhnicheskii Torg", *Yadernyi Kontrol*, 2 PIR Center, Moscow, no. 3, 2000, p. 66.
- ⁵ *Krasnaia Zvezda*, December 29, 1993.
- ⁶ Z. Wolfson, "Syria – FSU Military Cooperation", *Nativ*, no. 4-5, 2000. p. 15, (Hebrew).
- ⁷ Z. Wolfson, "Syria – FSU Military Cooperation", *Nativ*, no. 4-5, 2000. p. 14, (Hebrew).
- ⁸ *Ibid.*
- ⁹ V. Koziulin, *Rossia-Siria*, p. 67.
- ¹⁰ V. Koziulin, "Siriiskoe voennoe Ustrashenie-Poslednii Parad Nastupaet?" *Yadernyi Kontrol*, no. 2001, p. 67.
- ¹¹ Z. Wolfson, "Syria – FSU Military Cooperation", *Nativ*, no. 4-5, 2000. pp. 19-20, (Hebrew).
- ¹² V. Koziulin, "Siriiskoe voennoe Ustrashenie-Poslednii Parad Nastupaet?" *Yadernyi Kontrol*, no. 2001, p. 68.

- ¹³ In the year 2000, Russia promised to supply the Syrians with an AWACS-type airplane that would enable them to observe practically the whole territory of Israel.
- ¹⁴ P. Feldengauer, “Partnerstvo s Irakom – Delo Dokhdnoe”, *Segodnia*, November 23, 1997, p. 3.
- ¹⁵ Ibid.
- ¹⁶ Ibid.
- ¹⁷ Ibid.
- ¹⁸ V. Orlov, A. Otkina, “Uroki dela o Giriskopakh”, *Yadernyi Kontrol*, no. 2, 1998, p. 9. Also: A. Pikaev, “Russia and the Missile Technology Control Regime”, *Dangerous Weapons, Desperate States*, Routledge, 1999, p. 203.
- ¹⁹ Ibid., p. 12. Export controls have improved immeasurably in Russia. It is also known, however, that in recent years a significant portion of the violations was no longer being publicized in the media. Nevertheless, the information that does appear in the press can serve as an indicator of serious and systematic “defects.” Thus, at the beginning of October 2001, a report was published about the detention of a train containing 50-60 railroad cars filled with spare parts for tanks and armored technical equipment. This shipment was detained in Irkutsk. The goods were allegedly intended for a “country in Southeast Asia.” The presumed addressee – Vietnam – hardly needs such an amount of spare parts. They were probably really intended for sale to Iraq and other countries.
- ²⁰ Ibid.
- ²¹ *Jane’s Intelligence Review*, June 6, 2001, p. 12.
- ²² *Eksport Vooruzhenii*, no. 4, 2000, p. 44, <www.cast.ru>, also *Jane’s Intelligence Review*, June 6, 2001, p. 12.
- ²³ *Nezavisimoe Voennoe Obozrenie*, October 10, 2001.
- ²⁴ V. Naumkin, *Torgovlia Vooruzheniem I Voенno-politicheskaia Stabil’nost’*, Moscow, 1996, pp. 95-96.
- ²⁵ V. Orlov, “Export Controls and Nuclear Smugglings in Russia”, in *Dangerous Weapons, Desperate States*, Routledge, 1999, p. 165.
- ²⁶ *Jane’s Intelligence Review*, July 18, 2001.
- ²⁷ *Nezavisimoe Voennoe Obozrenie*, October 5, 2001, p. 1.
- ²⁸ *Nezavisimaia Gazeta*, October 3, 2001.
- ²⁹ *Jane’s Intelligence Review*, May 23, 2001, p. 16 and July 11, 2001, p. 16.
- ³⁰ P. Bernstein, Y. Shields, B. Walrath, *Technology Infrastructure Assessment of Iran*, December 30, 1992.
- ³¹ *Nezavisimoe Voennoe Obozrenie*, October 5, 2001, p. 1.
- ³² V. Sazhin, “Military Power of Iran: from Ashes to Diamond”, *The Past, Present, Future of Islamic Revolution in Iran*, The Institute of Oriental Studies, Moscow, 1999, pp. 73-85. Also: *Nezavisimaia Gazeta, Dipkurier Supplement*, February 15, 2001, p. 6.
- ³³ I. Safranchuk, “Yadernye I Raketnye Programmy Irana I Bezopasnost’ Rossii”, *Nauchnye Zapiski PIR Tcentra*, no. 8, 1998, p. 27.
- ³⁴ The “credo” of the Atomic Power Ministry is expressed most clearly and consistently in articles by V. Mikhailov, former Minister and the man mainly responsible for the development of Russia’s nuclear arms industry. See for instance his article in *Nezavisimoe Voennoe Obozrenie*, no. 15, 1999, p. 6.
- ³⁵ *Nezavisimoe Voennoe Obozrenie*, no. 15, 1999, p. 6.

- ³⁶ V. Belous, *Yadernyi Kontrol*, no. 4, 1999, pp. 62-63.
- ³⁷ Z. Wolfson, "The Nuclear Mushroom: New Shape, New Policy", *CIS Environmental and Disarmament Yearbook*, 1999, Mayrock Center, Hebrew University, pp. 1-11. Putin forced the Duma to allow the Atomic Energy Ministry to import radioactive wastes into Russia, "for treatment". Western clients are prepared to pay, on the average, \$1 million per ton of waste accepted by Russia.
- ³⁸ Interview with G. Ropota, *Nezavisimoe Voennoe Obozrenie*, no. 21, 1999, p. 6.
- ³⁹ *Nezavisimoe Voennoe Obozrenie*, no. 10, 2001, pp. 1 and 6 and *Nezavisimoe Voennoe Obozrenie*, no. 11, 2001, p. 6.
- ⁴⁰ *Nezavisimoe Voennoe Obozrenie*, no. 25, 2001.
- ⁴¹ Z. Wolfson, "Syria-FSU Military Cooperation", *Nativ*, no. 4-5, 2000, p. 18.
- ⁴² G. Kluchnikov, "Na Ukraine Protzvetaet Tenevaia Torgovlia Oruzhiem", *Nezavisimoe Voennoe Obozrenie*, no. 4, 1997, p. 6.
- ⁴³ V. Zaborsky, "Export Control Development in Ukraine", *Dangerous Weapons, Desperate States*, Routledge, 1999, p. 45.
- ⁴⁴ V. Koziulin, "Rossia-Siria: Voennno-Tekhnicheskii Torg", *Yadernyi Kontrol*, no. 3, 2000.
- ⁴⁵ K. Makienko, "Military-Technical Cooperation of Belarus with Foreign Countries in 1996-1999", *Eksport Vooruzhenii*, no. 5, 1999, <www.cast.ru>.
- ⁴⁶ *Eksport Vooruzhenii* (Arms Export), no. 1, 2001, <www.cast.ru>.
- ⁴⁷ *Jane's Intelligence Review*, February 28, 2001, p. 10.
- ⁴⁸ K. Makienko, "Military-Technical Cooperation of the CIS Foreign Countries", *Eksport Vooruzhenii* (Arms Export), no. 3, 1999, <www.cast.ru>.
- ⁴⁹ *Ibid.*, p. 50. *Sovetskaia Belarus*, July 28, 2001. Also: *Sovetskaia Belarus*, August 9, 2001.
- ⁵¹ N. Viktorovich, *Russkii Telegraph*, May 25, 1998, p. 5.
- ⁵² *Jane's Intelligence Review*, June 6, 2001, p. 12. Also *Nezavisimoe Voennoe Obozrenie*, no. 10, March 23-29, 2001, p. 6.
- ⁵³ On October 14, 2001, Iranian television for the first time touched upon the topic of Iran possessing nuclear weapons. In the course of the discussion, the Hamas representative declared that nuclear weapons should be used against Israel, even if many Moslems would be killed in the course of such an attack. It is obvious that the authorities were guided by complex political calculations in organizing a discussion on this topic after the beginning of the American attack in Afghanistan. But quite apart from any political calculations, the remarks heard on Iranian TV seriously strengthen assumptions about Iran possessing the technical base for creating nuclear weapons.